REMARKS

Appreciation is hereby expressed to Examiner Diramio for the interview so courteously granted on March 30, 2009. The Examiner is also thanked for withdrawing the previous rejections of the claims under 35 U.S.C. 103(a) as being unpatentable over Kitajima, et al. in view of Kadoya and Matsuda, et al. Further, the Examiner is thanked for providing a very detailed and professional office action which facilitates arriving at the issues more readily. Claims 6-8, 11-15 and 18-20 remain in the application, claims 1-5, 9, 10 and 16 having been withdrawn at being directed to non-elected inventions.

Reconsideration is respectfully requested of the rejection of Claims 6-8, 14, 15, 18 and 19 under 35 U.S.C. 103(a) as being unpatentable over Kitajima, et al. (US 5,876,605), in view of Huang, et al. (US 2003/0089660).

Respecting Kitajima, et al., the Examiner recognizes in the rejection that Kitajima, et al. fail to teach either that the first filter member has a packing density of a downstream part higher than a packing density of an upstream part in the filter member, or that the microporous (plasma or serum separating) membrane has a porosity of not more than 25% and a mean surface roughness of not more than 100 nm.

In order to cure the deficiencies of Kitajima, et al., the Examiner now relies upon a new secondary reference of Huang, et al. which discloses an asymmetric porous polytetrafluoroethylene membrane having a dense skin layer on one side and a continuously foamed porous layer on the other. The Examiner is relying on the disclosure in Huang, et al. that this membrane can have a total porosity of 20 – 70% and the dense skin layer can have a surface

roughness Ra of 20 – 165 nm. In the rejection the Examiner concludes that it would have been obvious to one skilled in the art to substitute in the Kitajima, et al. filter device the microporous membrane of Huang, et al. having the porosity and surface roughness called for in the claims herein. The reasons given for this substitution is that it would have been obvious to one of ordinary skill in the art to select a specific porosity of not more than 25% and a mean surface roughness of not more than 100 nm in order to achieve an optimal separation performance and/or efficiency.

During the interview the undersigned presented a number of arguments why one of ordinary skill in the art would not substitute the membrane of Huang, et al. in the filter device of Kitajima, et al. These reasons are discussed below.

1. The asymmetric porous membrane of Huang, et al. is used for separating a liquid-liquid homogenous mixture such as, for example, a mixture of alcohol and water (page 5, paragraph 0086). There is no disclosure whatever in Huang, et al. that the asymmetric porous membrane disclosed therein could be used for the separation of plasma or serum from blood.

The filter device disclosed in Kitajima, et al. is directed to separation of blood components from the blood. Thus, Kitajima, et al. and Huang, et al. are far different from each other in their technical fields, and these references would be considered by persons of ordinary skill in the art to be non-analogous art. For this reason, it is respectfully submitted that one of ordinary skill in the art would not substitute the membrane of Huang, et al. in the filter device of Kitajima, et al.

2. It is also respectfully submitted that those skilled in the field of Kitajima, et al. would not readily adopt the porosity and surface roughness in Huang, et al. to achieve the requirements

of the present invention, since persons of ordinary skill in the blood separation field would not normally be skilled in the liquid-liquid separation field. Accordingly, it is clear that there is no motivation for one of ordinary skill in the field of Kitajima, et al. to combine the teachings of Huang, et al. with the filter device of Kitajima, et al.

Furthermore, Kitajima, et al. clearly describe that the porosity of the microporous membrane is preferably not less than 40%. Particularly, in column 6, lines 1-27, Kitajima, et al. disclose that the porosity of the microporous membrane is preferably 40 – 95%, more preferably 50 – 95%, and even more preferably 70 – 95%. It would thus be apparent to persons of ordinary skill in the art of blood separation that high porosity is more suitable, and there is no disclosure or suggestion in Kitajima, et al. of using a membrane with a porosity of not more than 25%. Accordingly, it is respectfully urged that Kitajima, et al. clearly teaches against using membranes having a porosity of not more than 25%.

3. The secondary reference of Huang, et al. disclose an asymmetric porous membrane having a porosity between 20 – 70% which can also have a surface roughness within 20 – 165 nm. However, Huang, et al. fails to describe in any of the examples a membrane having a porosity of not more than 25% with a surface roughness of not more than 100 nm. Accordingly, the secondary reference of Huang, et al. does not concretely disclose an asymmetric porous membrane having a porosity of not more than 25% with a surface roughness of not more than 100 nm.

Further, Huang, et al. describes in paragraph (0040) a membrane having a porosity of 20 – 70% and preferably 30 – 60%. It is therefore clear that Huang, et al. also suggests the porosity is preferably higher, namely, 30% or higher.

4. The secondary reference of Huang, et al. neither describes nor suggests how to prepare a membrane having a porosity of not more than 25% with a surface roughness of not more than 100 nm. Although a porosity of 28% can be accomplished by heat treatment at 380 – 400 ° C (example 4), the surface roughness exceeds 100 nm. This is illustrated in Table 1 on page 5 of Huang, et al. which describes in tabular form the data obtained from Examples 1-4 and comparative Examples 1 and 2. There it can be seen that when the membrane of Huang, et al. is heated in Example 4 to 380°C, the porosity obtained is 28%, but the surface roughness Ra is 158.5. When the treating temperature is raised to 400°C, as in comparative example 1, the porosity drops to 15% but the surface roughness was impossible to measure because the film was too rough.

It is therefore clear from Table 1 of Huang, et al. that if the treating temperature is raised to above 380°C, the resulting surface roughness would be over 100 nm. It is therefore respectfully submitted that if one of ordinary skill in the art substituted the membrane of the secondary reference of Huang, et al. in the filter device of Kitajima, et al., it would not be possible to obtain a membrane with a porosity of not more than 25% and a mean surface roughness of not more than 100 nm, as required by the claims herein.

On the basis of the discussion at the interview, it was understood by the undersigned that the Examiner agreed to withdraw the final rejection in this case. The Examiner is thanked for the courtesies extended at the interview in reviewing the technical data in Huang, et al. Withdrawal of the rejection is accordingly respectfully requested.

Reconsideration is respectfully requested of the rejection of Claims 11 and 20 under 35 U.S.C. 103(a) as being unpatentable over Kitajima, et al. (US 5,876,605), in view of

Huang, et al. (US 2003/0089660), as applied to claim 6 above, and further in view of Ayres (U.S. 3,891,553).

The deficiencies of the Kitajima, et al. and Huang, et al. references are discussed in detail above. The secondary reference of Ayres, et al. fails to cure the deficiencies of Kitajima, et al. and Huang, et al. It is therefore respectfully requested that the instant rejection by withdrawn.

Reconsideration is respectfully requested of the rejection of Claim 12 under 35 U.S.C. 103(a) as being unpatentable over Kitajima, et al. (US 5,876,605), in view of Huang, et al. (US 2003/0089660), as applied to claim 6 above, and further in view of Bell (US 2003/0206828).

The deficiencies of the Kitajima, et al. and Huang, et al. references are discussed in detail above. The secondary reference of Bell fails to cure the deficiencies of Kitajima, et al. and Huang, et al. It is therefore respectfully requested that the instant rejection by withdrawn.

Reconsideration is respectfully requested of the rejection of Claim 13 under 35 U.S.C. 103(a) as being unpatentable over Kitajima, et al. (US 5,876,605), in view of Huang, et al. (US 2003/0089660), as applied to claim 6 above, and further in view of Anraku (US 5,413,786).

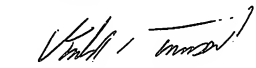
The deficiencies of the Kitajima, et al. and Huang, et al. references are discussed in detail above. The secondary reference of Anraku fails to cure the deficiencies of Kitajima, et al. and Huang, et al. It is therefore respectfully requested that the instant rejection by withdrawn.

Reconsideration is respectfully requested of the rejection of Claim 17 under 35 U.S.C. 103(a) as being unpatentable over Kitajima, et al. (US 5,876,605), in view of Huang, et al. (US 2003/0089660), as applied to claim 6 above, and further in view of Chu (US 6,632,681).

The deficiencies of the Kitajima, et al. and Huang, et al. references are discussed in detail above. The secondary reference of Chu fails to cure the deficiencies of Kitajima, et al. and Huang, et al. It is therefore respectfully requested that the instant rejection by withdrawn.

In view of the foregoing, it is respectfully submitted that the application is now in condition for allowance, and early action and allowance thereof is accordingly respectfully requested. In the event there is any reason why the application cannot be allowed at the present time, it is respectfully requested that the Examiner contact the undersigned at the number listed below to resolve any problems.

Respectfully submitted,



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